

CURRICULUM VITAE

NAME: Roger P. Hewitt

ORGANIZATION: National Oceanic & Atmospheric Administration
NOAA Fisheries
Southwest Fisheries Science Center
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PRESENT POSITION: Director, Fisheries Resources Division

EDUCATION: B.S., Civil Engineering, University of Santa Clara, 1969
M.S., Oceanography, Scripps Institution of Oceanography, 1975
Ph.D., Marine Biology, Scripps Institution of Oceanography, 1982

TITLE OF DISSERTATION: Spatial Pattern and Survival of Anchovy Larvae: Implications of Adult Reproductive Strategy.

EXPERIENCE: 2004-present: Director, Fisheries Resources Division
Southwest Fisheries Science Center
1989-2004: Chief Scientist, Antarctic Ecosystem Research Group
Southwest Fisheries Science Center
1986-1989: Assistant to Director, Southwest Fisheries Science Center
1984-1986: Commanding Officer, NOAA Ship *Miller Freeman*
1980-1984: Biological Oceanographer, Coastal Fisheries Division
Southwest Fisheries Science Center
1977-1979: Executive Officer, NOAA Ships *Miller Freeman*, *David Starr Jordan*, and *Townsend Cromwell*
1980-1984: Biological Oceanographer, Coastal Fisheries Division
Southwest Fisheries Science Center
1973-1977: Cartographer, Coastal Fisheries Division
Southwest Fisheries Science Center
1971-1973: Operations Officer, NOAA Ship *Davison*
1969-1971: Chief, Photogrammetric Field Party
Atlantic Marine Center

AWARDS, AFFILIATIONS, SERVICE and LICENSES:

- Special Act Award for superior performance while GS-14 (2002, 2001, 2000, 1999, 1998, 1997, 1996, 1995, 1994)
- Outstanding performance rating resulting in merit pay increases while GM-14 (1993, 1992, 1991, 1990)
- NOAA Special Achievement Award for the design and conduct of the first Antarctic field season under the administration of SWFSC (1989)
- Inter-agency Committee on Information Resources Management, Award for Technical Excellence, for development of Online CalCOFI Data System (1988)
- Unit Citation for innovative deep-water wire-drag survey of Rosario Strait (1973)
- Associate Editor – *Fisheries Research* (1999 to present)
- Member of Oceanography Society, American Fisheries Society
- US representative to Commission for the Conservation of Antarctic Larine Living Resources (CCAMLR) Scientific Committee (2001 – 2005)
- US delegate to CCAMLR Working Group on Ecosystem Monitoring and Management (1995 – 1999)
- Convener CCAMLR Working Group on Ecosystem Monitoring and Management (2000 – 2005)
- US delegate to CCAMLR Working Group on Krill (1989 – 1994)
- Chaired CCAMLR Workshop on the Scotia Sea (La Jolla, 1998)
- Chaired CCAMLR B₀ Workshop (La Jolla, 2000)
- Chaired Workshop on Future Agenda of WG-EMM (Kristineberg Marine Research Station, Sweden, 2001)
- Numerous program review panels, boards and thesis committees
- Registered Professional Engineer, State of California
- Registered Land Surveyor, State of California
- Ship's Master License (1800 tons, All Oceans), U.S. Coast Guard

PUBLICATIONS:

Peer-reviewed articles

L.T. Ballance , R.L.. Pitman 1, R.P. Hewitt, D. Siniff, W. Trivelpiece, P. Clapham, and R.L. Brownell, Jr. In press. The removal of large whales from the Southern Ocean: Evidence for long-term ecosystem effects? In J. Estes et al. (eds) *The Role of Large Whales in the Ecosystem*. UC Press.

R.P. Hewitt, I. Everson and C.D. Jones. In press. Reconciling fisheries with conservation: three examples form the Southern Ocean. *Proceedings of the Fourth World Fisheries Congress*. Amer. Fisheries Society.

D.A. Croll, R.P. Hewitt, D.A. Demer, and J. Jansen. 2006. Effects of variability in prey abundance and distribution on the reproduction and foraging in chinstrap penguins. *Journal of Zoology* 269: 506-513.

R.P. Hewitt, J.L.Watkins, M. Naganobu, P. Tshernyshkov, A.S. Brierley, D.A. Demer, S. Kasatkina, Y. Takao, C. Goss, A. Malyshko, M. Brandon, S. Kawaguchi, V. Siegel, P.

- Trathan, J.H. Emery, I. Everson and D. Miller. 2004. Biomass of Antarctic krill in the Scotia Sea in January/February 2000 and its use in revising an estimate of precautionary yield. *Deep-Sea Research II*, 51:1215–1236.
- R.P. Hewitt, S. Kim, M. Naganobu, M. Gutierrez, D. Kang, Y. Takao, J. Quinones, Y.-H. Lee, H.-C. Shin, S. Kawaguchi, J.H. Emery, D.A. Demer and V.J. Loeb. 2004. Variation in the biomass density and demography of Antarctic krill in the vicinity of the South Shetland Islands during the 1999/2000 austral summer. *Deep-Sea Research II*, 51: 1411-1419.
- J.L. Watkins, R. Hewitt, M. Naganobu and V. Sushin. 2004. The CCAMLR 2000 Survey: a multinational, multi-ship biological oceanography survey of the Atlantic sector of the Southern Ocean. Editorial in *Deep-Sea Research II*, 51: 1205-1214.
- E.J. Murphy, S. E. Thorpe, J. L. Watkins & R. Hewitt. 2004. Modeling the krill transport pathways in the Scotia Sea: spatial and environmental connections generating the seasonal distribution of krill. *Deep-Sea Research II*, 51: 1435-1456.
- S. Reilly, S. Hedley, J. Borberg, R. Hewitt, D. Thiele, J. Watkins and M. Naganobu. 2004. Biomass and energy transfer to baleen whales in the South Atlantic sector of the Antarctic. *Deep-Sea Research II*, 51: 1397-1410.
- O. Holm-Hansen, M.Naganobu, S. Kawaguchi, T.Kameda, V. A. Sushin, I.Krasovski, J. Priddle, R.Korb, M. Brandon, D. Demer, R. P. Hewitt, and C.D. Hewes. 2004. Factors influencing the distribution and biomass of phytoplankton in the Scotia Sea and adjoining waters. *Deep-Sea Research II*, 51:1333–1350.
- O. Holm-Hansen, M. Kahru, C.D. Hewes, S. Kawaguchi, T.Kameda, V. A. Sushin, I.Krasovski , J. Priddle, R.Korb, R. P. Hewitt, and B.G. Mitchell. 2004. Temporal and spatial distribution of chlorophyll-a in surface waters of the Scotia Sea as determined by both shipboard measurements and satellite data. *Deep-Sea Research II*, 51: 1323-1332.
- R. Hewitt, G. Watters, P.N, Trathan, J.P. Croxall, M.E. Goebel, D. Ramm, K. Reid, W.Z. Trivelpiece and J.L. Watkins. 2004. Options for allocating the precautionary catch limit for krill among small-scale management units in the Scotia Sea. *CCAMLR Science* 11: 81-97.
- R.P. Hewitt, D.A. Demer, J.H. Emery. 2003. An eight-year cycle in krill biomass density inferred from acoustic surveys conducted in the vicinity of the South Shetland Island during the austral summers of 1991/92 through 2001/02. *Aquatic Living Resources* 16(3): 205-213.
- R.P. Hewitt, J.L.Watkins, M. Naganobu, P. Tshernyshkov, A.S. Brierley, D.A. Demer, S. Kasatkina, Y. Takao, C. Goss, A. Malyshko, M. Brandon, S. Kawaguchi, V. Siegel, P. Trathan, J.H. Emery, I. Everson and D. Miller. 2002. Setting a precautionary catch limit for Antarctic krill. *Oceanography* 15(3): 26-33.
- K. Reid, E J. Murphy, V. Loeb and R. P. Hewitt. 2002. Krill population dynamics in the Scotia Sea: variability in growth and mortality within a single population. *Journal of Marine Systems* 36: 1-10.
- P.N. Trathan, J.L. Watkins, A.W.A. Murray, A.S. Brierley, I. Everson, C. Goss, J. Priddle, K. Reid, P. Ward, R. Hewitt, D. Demer, M. Naganobu, S. Kawaguchi, V. Sushin, S.M. Kasatkina, S. Hedley, S. Kim and T. Pauly. 2001. The CCAMLR-2000 Krill Synoptic Survey: a description of the rationale and design. *CCAMLR Science* 8: 1-24.

- R.P. Hewitt. 2000. An index of per-capita recruitment. *CCAMLR Science* 7: 179-196.
- R.P. Hewitt and E.H. Linen Low. 2000. The fishery on Antarctic krill: defining an ecosystem approach to management. *Reviews in Fisheries Science* 8(3): 235-298.
- R.P. Hewitt and D.A. Demer. 2000. The use of acoustic sampling to estimate the dispersion and abundance of euphausiids, with an emphasis on Antarctic krill. *Fisheries Research* 47: 215-229.
- G. Swartzman, R. Brodeur, J. Napp, D. Walsh, R. Hewitt, D. Demer, G. Hunt and E. Loggerwell. 1999. Relating predator and prey spatial distributions in the Bering Sea using acoustic backscatter data. *Canadian Journal of Fisheries and Aquatic Sciences* 56(Suppl. 1):188-198.
- G. Swartzman, R. Brodeur, J. Napp, G. Hunt, D. Demer and R. Hewitt. 1999. Spatial proximity of age-0 walleye pollock (*Theragra chalcogramma*) to zooplankton near the Pribilof Islands, Bering Sea, Alaska. *ICES Journal of Marine Science* 56(4):545-560.
- A.S. Brierley, D.A. Demer, J.L. Watkins and R.P. Hewitt. 1999. Concordance of interannual fluctuations in acoustically estimated densities of Antarctic krill around South Georgia and Elephant Islands: biological evidence of same-year teleconnections across the Scotia Sea. *Marine Biology* 134(4):675-681.
- D.A. Demer, M.A. Soule and R.P. Hewitt. 1999. A multi-frequency method for improved accuracy and precision of in situ target strength measurements. *Journal of the Acoustic Society of America* 105(4):2359-2376.
- D.A. Croll, B.R. Tershy, R.P. Hewitt, D.A. Demer, P.C. Fiedler, S.E. Smith, W.A. Armstrong, J.M. Popp, T. Kiekhefer, V.R. Lopez, J. Urban, and D. Gendron. 1998. An integrated approach to the foraging ecology of marine birds and mammals. *Deep-Sea Research II*, 45:1353-1371.
- P. Fiedler, S. Reilly, R. Hewitt, D. Demer, V. Philbrick, S. Smith, W. Armstrong, D. Croll, B. Tershy and B. Mate. 1998. Blue whale habitat and prey in the Channel Islands. *Deep-Sea Research II*, 45:1781-1801.
- E.A. Logerwell, R. P. Hewitt and D.A. Demer. 1998. Scale-dependent spatial variance patterns and correlations of seabirds and prey in the southeastern Bering Sea as revealed by spectral analysis. *Ecography* 21:212-223.
- S. Kim, V. Siegel, R. Hewitt, M. Nagonobu, D. Demer, T. Ichii, S. Kang, S. Kawaguchi, V. Loeb, A. Amos, K. Chung, O. Holm-Hansen, W. Lee, N. Silva and M. Stein. 1998. Temporal changes in marine environments in the Antarctic Peninsula area during the 1994/95 austral summer. *Memoirs of National Institute for Polar Research*, Special Issue No. 52:186-208.
- V. Loeb, V. Siegel, O. Holm-Hansen, R. Hewitt, W. Fraser, W. Trivelpiece, and S. Trivelpiece. 1997. Effects of sea-ice extent and krill or salp dominance on the Antarctic food web. *Nature* 387:897-900.
- R.P. Hewitt. 1997. Areal and seasonal extent of sea ice cover off the northwestern side of the Antarctic Peninsula: 1979 through 1995. *CCAMLR Science* 4:65-73.

- R.P. Hewitt, G.W. Watters and D.A. Demer. 1997. Indices of prey availability near the Seal Island CEMP site: 1990 through 1996. *CCAMLR Science* 4:37-45
- J.E. Zamon, C.H. Greene, E. Meir, D.A. Demer, R.P. Hewitt, and S.N. Sexton. 1996. Three-dimensional visualization of acoustic observations of the prey field of foraging chinstrap penguins. *Marine Ecology Progress Series* 131:1-10.
- R.P. Hewitt and D.A. Demer. 1996. Lateral target strength of Antarctic krill. *ICES Journal of Marine Science* 53(2):297-302.
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- D.A. Demer and R.P. Hewitt. 1995. Bias in acoustic estimates of *Euphausia superba* due to diel vertical migration. *Deep-Sea Research I* 42(4):455-475.
- Y. Matsuura and R. Hewitt. 1995. Changes in the spatial patchiness of Pacific mackerel, *Scomber japonicus*, larvae with increasing age and size. *U.S. Fisheries Bulletin* 93: 172-178.
- R.P. Hewitt and D.A. Demer. 1993. Dispersion and abundance of Antarctic krill in the vicinity of Elephant Island in the 1992 austral summer. *Marine Ecology Progress Series* 99:29-39.
- D.A. Demer and R.P. Hewitt. 1993. Calibration of an acoustic echo-integration system in a deep tank, with system gain comparisons over standard sphere material, water temperature, and time. *CCAMLR Selected Scientific Papers, 1992* (SC-CAMLR-SSP/9), CCAMLR, Hobart, Australia: 127-144.
- G.M. Watters and R.P. Hewitt. 1992. Alternative methods for determining subarea or local area catch limits for krill in statistical area 48. *CCAMLR Selected Scientific Papers, 1992* (SC-CAMLR-SSP/9), CCAMLR, Hobart, Australia: 237-252.
- R.P. Hewitt and D.A. Demer. 1991. Krill abundance. *Nature* 353:310.
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- R.P. Hewitt. 1988. The CalCOFI sampling protocol and time series, point/counterpoint. *CalCOFI Reports* Vol. XXIX: 25-26.
- R.P. Hewitt. 1988. Historical review of the oceanographic approach to fishery research. *CalCOFI Reports* Vol. XXIX: 27-41.
- P.C. Fiedler, R.D. Methot and R.P. Hewitt. 1986. Effects of California El Nino 1982-1984 on the northern anchovy. *Journal of Marine Research* 44, 317-338.
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- R.P. Hewitt, G.H. Theilacker and N.C.H. Lo. 1985. Causes of mortality in young jack mackerel. *Marine Ecology Progress Series* 26:1-10.
- R.P. Hewitt. 1985. The 1984. Spawning biomass of the northern anchovy. *CalCOFI Reports* Vol. XXVI: 17-24.

- P.E. Smith and R.P. Hewitt. 1985. Anchovy egg dispersal and mortality as inferred from close-interval observations *CalCOFI Reports* Vol. XXVI:97-110.
- S.J. Picquelle and R.P. Hewitt. 1984. The 1983 spawning biomass of the northern anchovy. *CalCOFI Reports* Vol. XXV: 16-27.
- R.P. Hewitt. 1983. Roll, Heave and vertical ichthyoplankton tows. *Ocean Science Engineering* 8(1):41-51.
- S.J. Picquelle and R.P. Hewitt. 1983. The northern anchovy spawning biomass for the 1982-83 California Fishing Season. *CalCOFI Reports* Vol. XXIV: 16-28.
- R.P. Hewitt and G.D. Brewer. 1983. Nearshore production of young anchovy. *CalCOFI Reports* Vol. XXIV: 235-244.
- R.P. Hewitt and R.D. 1982. Methot. Distribution and mortality of northern anchovy larvae in 1978 and 1979. *CalCOFI Reports* Vol. XXIII: 226-245.
- R.P. Hewitt. 1981. The value of pattern in the distribution of young fish. *Rapp. P.-v. Reun. Cons. int. Explor. Mer*, 178: 229-236.
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- L.E. Eber and R.P. Hewitt. 1979. Conversion algorithms for the CalCOFI station grid. *CalCOFI Reports* Vol. XX: 135-137.
- R.P. Hewitt and P.E. Smith. 1979. Seasonal distributions of epipelagic fish schools and fish biomass over portions of the California Current region. *CalCOFI Reports* Vol. XX: 102-110.
- R.P. Hewitt, P.E. Smith and J.C. Brown. 1976. The development and use of sonar mapping for pelagic stock assessment in the California Current area. *U. S. Fisheries Bulletin* Vol. 74(2): 281-300.
- R.P. Hewitt. 1976. Sonar mapping in the California Current area: A review of recent developments. *CalCOFI Reports* Vol. XVIII: 149-154.

Books, thesis and book chapters

- R.P. Hewitt, and J. Lipsky. 2002. Krill. In *Encyclopedia of Marine Mammals*, W. F. Perrin, B. Wursig and J.G.M. Thewissen (eds). 676-684. Academic Press, San Diego.
- R.P. Hewitt. 1982. *Spatial Pattern and Survival of Anchovy Larvae: Implications of Adult Reproductive Strategy*. Ph.D. Dissertation, University of California at San Diego: 187 pp.
- R.P. Hewitt. 1980. *Distributional Atlas of Fish Larvae in the California Current Region: Northern Anchovy, Engraulis mordax Girard, 1966 through 1979*. CalCOFI Atlas No. 28: 101 pp.

Reports

- R.P. Hewitt and D.A. Demer. 1997. Distribution of volume backscattering strength near Elephant Island in the 1997 austral summer. U.S. Antarctic Journal XXXII:119-121.
- J.E. Martin, R.P. Hewitt and R.S. Holt. 1997. The U.S. Antarctic Marine Living Resources (AMLR) program: 1996-1997 field season activities. U.S. Antarctic Journal XXXII:117-119.
- R.P. Hewitt and D.A. Demer. 1996. Distribution of volume backscattering strength near Elephant Island in the 1996 austral summer. U.S. Antarctic Journal XXXI:134-136.
- J.E. Martin, R.P. Hewitt and R.S. Holt. 1996. The U.S. Antarctic Marine Living Resources (AMLR) program: 1995-1996 field season activities. U.S. Antarctic Journal XXXI:131-133.
- R.P. Hewitt and D.A. Demer. 1995. Distribution of volume backscattering strength near Elephant Island in the 1995 austral summer. U.S. Antarctic Journal XXX:219-220.
- J.E. Rosenberg, R.P. Hewitt and R.S. Holt. 1995. The U.S. Antarctic marine Living Resources (AMLR) program: 1994-95 field season activities. U.S. Antarctic Journal XXX:217-218.
- J.R. Rosenberg, R.P. Hewitt and R.S. Holt. 1994. The U.S. 1993-94 field season activities. U.S. Antarctic Journal XXIX:181-183.
- R.P. Hewitt and D.A. Demer. 1994. Distribution and abundance of krill near Elephant Island in the 1993-94 austral summer. U.S. Antarctic Journal XXIX:183-184.
- R.R. Veit, E.D. Silverman, R.P. Hewitt, and D.A. Demer. 1994. Spatial and behavioral responses by foraging seabirds to Antarctic krill swarms. U.S. Antarctic Journal XXIX(5):164-166.
- R.P. Hewitt and D.A. Demer. 1993. Distribution and abundance of krill around Elephant Island, Antarctica, in the 1993 austral summer. U.S. Antarctic Journal XXVIII:183-185.
- J.R. Rosenberg, R.P. Hewitt and R.S. Holt. 1993. The U.S. Antarctic Marine Living Resources (AMLR) program: 1992-93 field season activities. U.S. Antarctic Journal XXVIII:181-182.
- R.P. Hewitt and D.A. Demer. 1992. AMLR Program: Distribution and abundance of krill near Elephant Island in the 1992 austral summer. U.S. Antarctic Journal XXVI: 210-212.
- J.R. Rosenberg, R.P. Hewitt and R.S. Holt. 1992. The U.S. AMLR program: 1991-92 field season activities. U.S. Antarctic Journal XXVI: 209-210.
- R.S. Holt, R.P. Hewitt, and J.E. Rosenberg. 1991. The U.S. AMLR program: 1990-91 field season activities. U.S. Antarctic Journal XXV: 187-188.
- R.P. Hewitt and D.A. Demer. 1991. Acquisition and evaluation of an acoustic system for mapping the distribution of Antarctic krill. NOAA/NMFS/SWFC Administrative Report LJ-91-46:23p.
- R.P. Hewitt. 1988. CalCOFI Online Data System, User's Manual.
- R.P. Hewitt, S. Jacobson and C. Meyer. 1988. CalCOFI Online Data System, Programmer's Manual. NOAA/NMFS/SWFC Administrative Report LJ-88-03: 120p.

- R.P. Hewitt. 1987. Strategic Plan for the Development of Information Systems in the Southwest Region of NMFS. NOAA/NMFS/SWFC Administrative Report LJ-87-10: 45p.
- J.F. Carr and R.P. Hewitt. 1987. Fisheries and environmental databases of the National Marine Fisheries Service. in Proceedings of the Minerals Management Service 1987 Information Transfer Meeting. MMS 87-0076:35-39.
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- R.P. Hewitt. 1986. Comparison between egg production method and larval census method for fish biomass assessment. In: R. Lasker (ed), An Egg Production Method for Estimating Spawning Biomass of Pelagic Fish: Application to the Northern Anchovy, *Engraulis mordax*. p. 95-99. NOAA Technical Report NMFS 36.
- P.E. Smith and R.P. Hewitt. 1986. Sea survey design and analysis for an egg production method of northern anchovy biomass assessment. In: R. Lasker (ed), An Egg Production Method for Estimating Spawning Biomass of Pelagic Fish: Application to the Northern Anchovy, *Engraulis mordax*. p. 17-26. NOAA Technical Report NMFS 36.
- P.E. Smith, W. Flerx and R.P. Hewitt. 1986. The CalCOFI Vertical Egg Tow (CalVET) Net. In: R. Lasker (ed), An Egg Production Method for Estimating Spawning Biomass of Pelagic Fish: Application to the Northern Anchovy, *Engraulis mordax*. p. 27-32. NOAA Technical Report NMFS 36.
- R.P. Hewitt, A. Bindman and N.C.H. Lo. 1984. Procedures for Calculating the Egg Production Estimate of Spawning Biomass. NOAA/NMFS/SWFC Admin. Rep. LJ-84-19, 46 pp.